tic coast westward, including part of the shore of Hudson Bay, to western Alaska, including the Aleutian Islands.

Esselenian.— Coast of California from Monterey Bay to Santa Lucia Mountain.

Iroquoian.— The St. Lawrence River region north of Lake Erie, northern Pennsylvania, State of New York, the lower Susquehanna in Pennsylvania and Maryland, north-eastern North Carolina, south-western West Virginia, western North Carolina, and most of Kentucky and Tennessee.

Kalapooian.— Valley of the Willamette River, Oregon.

Karankawan.— Texas coast around Matagorda Bay.

Keresan.— Upper Rio Grande, and on the Jemez and San José Rivers, New Mexico.

Kiowan.— Upper Arkansas and Purgatory Rivers, Colorado.

Kitunahan.— Cootenay River region, mostly in British Columbia.

Koluschan.— North-west coast from 55° to 60° north latitude.

Kulanapan.— Russian River region, and California coast from Bodega Head north to about latitude 39° 30′.

Kusan.— Coast of middle Oregon, Coos Bay and River, and at mouth of Coquille River, Oregon.

Lutuamian.— Region of Klamath Lakes and Sprague River, Oregon.

Mariposan.— Interior of California, east of the Coast Range, and south of Tulare Lake, in a narrow strip to below Tulare Lake, north as far as the Fresno River.

Moquelumnan.— Interior of California, bounded on the north by the Cosumnes River, on the south by the Fresno, on the east by the Sierras, and on the west by the San Joaquin; an area north of San Francisco and San Pablo Bays as far as Bodega Head and the head waters of Russian River.

Muskhogean.— The Gulf States from the Savannah River and the Atlantic west to the Mississippi, and from the Gulf to the Tennessee River.

Natchesan.— On St. Catherine Creek, near the site of the present city of Natches.

Palaihnihan.— Drainage of Pit River in north-eastern California.

Piman.— On the Gila River about 160 miles from its mouth, and on the San Pedro, in Arizona, and in Mexico on the Gulf of California.

Pujunan.— California; east bank of the Sacramento about 100 miles from its mouth, north to Pit River, eastward nearly to the borders of the State.

Quoratean.— Lower Klamath River, Oregon, from Happy Camp to the junction of the Trinity and Salmon River valley.

Salinan.— Region around the San Antonio and San Miguel missions, California.

Salishan.— North-western part of Washington, including Puget Sound, eastern Vancouver Island to about midway its length; coast of British Columbia to Bute Inlet; and the region of Bentinck Arm and Dean Inlet.

Sastean.— Middle Klamath River, northern California.

Shahaptian.— Upper Columbia River, and its tributaries in northern Oregon and Idaho and southern Washington.

Shoshonean.— Occupying generally the Great Interior Basin of the United States, as far east as the Plains, and reaching the Pacific in Los Angeles, San Bernardino, and San Diego Counties, California.

Siouan.— The Dakotas, parts of Minnesota, Wisconsin, Iowa, Nebraska, Kansas, Missouri, Arkansas, Indian Territory, with isolated colonies in Alabama (Biloxi), the Carolinas (Catawba), and borders of Virginia and North Carolina (Tutelo).

Skittagetan.— Queen Charlotte Islands, Forrester Island, and south-eastern part of Prince of Wales Island.

Takilman.— Oregon coast about the lower Rogue River.

Tañoan.— Rio Grande and tributary valleys, from about 30° to about 36° 30′.

Timuquanan.— Florida.

Tonikan.— Lower Yazoo River, Mississippi.

Tonkawan.— Western and south-western parts of Texas.

Uchean.— Lower Savannah River and perhaps the South Carolina coast.

Waiilatpuan.— Lower Walla Walla River, Oregon, and about Mounts Hood and Jefferson.

Wakashan.— West coast of Vancouver Island, and north-west tip of Washington.

Washoan.— Eastern base of the Sierras, south of Reno, Nevada, to the lower end of Carson valley.

Weitspekan.— Lower Klamath River, Oregon, from the mouth of the Trinity.

Wishoskan.— Coast of California from just below the mouth of Eel River to a little north of Mad River.

Yakonan.— Along the lower Yaquina, Alsea, Siuslaw, and Umpqua Rivers, Oregon.

Yanan.— Chiefly in the southern part of Shasta County, California.

Yukian.— Round valley, California, and west to the coast.

Yuman.— Lower California; the Colorado from its mouth to Cataract Creek, the Gila and tributaries as far east as the Tonto Basin, Arizona.

Zuñian.—A small area on Zuñi River, western New Mexico.

J. W. POWELL.

## NOTES AND NEWS.

THE director of the central dispensary at Bagdad has sent to *La Nature* a specimen of an edible substance which fell during an abundant shower in the neighborhood of Merdin and Diarbékir (Turkey in Asia) in August, 1890. The rain which accompanied the substance fell over a surface of about ten kilometres in circumference. The inhabitants collected the "manna," and made it into bread, which is said to have been very good, and to have been easily digested. The specimen sent to *La Nature* is composed of small spherules, according to *Nature* of Jan. 15. Yellowish on the outside, it is white within. Botanists who have examined it say that it belongs to the family of lichens known as *Lecanora esculenta*. According to Decaisne, this lichen, which has been found in Algeria, is most frequently met with on the most arid mountains of Tartary, where it lies among pebbles from which it can be distinguished only by experienced observers. It is also found in the desert of the Kirghizes. The traveller Parrot brought to Europe specimens of a quantity which had fallen in several districts of Persia at the beginning of 1828. He was assured that the ground was covered with the substance to the height of two decimetres, that animals ate it eagerly, and that it was collected by the people.

— Mr. William Warren supplies some information to *Engineering* regarding his work in the search for seams of coal in Tonquin, which, as the result of the late wars there, is now part of the French territory. The coal, of which there is an extensive field, will add greatly to the importance of the territorial acquisition to the French in view of its importance as a coaling station, and will afford a further evidence of the varying fortunes of politicians, as M. Ferry, rising from the obloquy into which he fell as a result of the public disapproval of the continuance of the campaign, will now find favor and commendation for foresight. The seams of

coal have been known for something like half a century. They crop out all round the bases of lowish hills which fringe the shores of the Gulf of Tonquin. One of the seams is 152 feet thick, of almost solid coal. It is a semi-anthracite of very fine quality, having about 87 per cent of fixed carbon, and from 7 to 12½ per cent of volatile matter, from 2 to 3 per cent ash, free from pyrites, and of course quite smokeless. A steamer named "Fatshan," of fourteen knots speed, has been tried with 300 tons of the coal. The results were very satisfactory, the vessel steaming well at a fully maintained speed, with almost the same consumption as in the case of Cardiff coal. The discovery is a serious one for the Japanese coal industry, as Hong-Kong formerly took about 50,000 tons monthly. The Japan coal has 23 to 27 per cent of ash, against 2 to 3 per cent in the Tonquin coal. The gain in decreased consumption is enhanced by reason of the increased cargo space available, or, in other cases, in allowing the vessels to keep the sea for a longer time.

— The lion is eaten by some African races, but its flesh is held in small esteem. The Zulus find carrion so much to their liking, that, according to the late Bishop Colenso, they apply to food peopled by large colonies of larvæ the expressive word "uborni," signifying in their uncouth jargon "great happiness." David Livingstone, that keen and accurate observer, reminds us that the aboriginal Australians and Hottentots prefer the intestines of animals. "It is curious," he says, "that this is the part which animals always begin with, and it is the first choice of our men." On this point it may be well to remind the civilized reader that the woodcock and the red mullet, or sea woodcock, are both eaten and relished without undergoing all the cleaning processes which most animals used for food among us generally experience to fit them for the table; so that our aversion to the entrails of animals is not absolute, but only one of degree. The hippopotamus is a favorite dish with some Africans when they can get this unwieldy and formidable river monster, and when young its flesh is good and palatable, but with advancing years it becomes coarse and unpleasant. The Abyssinians, the amiable people to whom, according to the Italian prime minister, his countrymen proposed to teach wisdom and humanity, find the rhinoceros to their taste: so they do the elephant, which is also eaten in Sumatra. Dr. Livingstone describes the elephant's foot as delicious, and his praises will be echoed by many travellers in lands where that sagacious monster still lingers in rapidly decreasing numbers. "We had the foot," wrote the doctor, "cooked for breakfast next morning, and found it delicious. It is a whitish mass, slightly gelatinous, and sweet like marrow. A long march to prevent biliousness is a wise precaution after a meal of elephant's foot. Elephant's tongue and trunk are also good, and, after long simmering, much resemble the hump of a buffalo and the tongue of an ox; but all the other meat is tough, and, from its peculiar flavor, only to be eaten by a hungry man."

— The London *Times* for Jan. 19 contains some interesting information about the manuscript of Aristotle recently discovered in Egypt, and now in the British Museum. It is described as a constitutional history of Athens, and as one of a collection of constitutions which Aristotle accumulated, describing various ancient states, and numbering 158. The treatise in its present form contains 63 chapters of the size of those in Thucydides; but the first chapter is missing, and a few at the end mutilated. It is written on three papyrus rolls, and on what is called the *verso*, or back, side; the *recto* being occupied with the record of the bailiff's receipts and expenditures on a private estate in Egypt, dated month by month in the eleventh year of Vespasian, about A.D. 79. This record, which shows some of the peculiarities of writing found in the treatise itself, tends strongly to confirm the genuineness of the manuscript, which is further proved by the fact, that, of 91 passages in ancient writers known or believed to be quoted from this work, 78 are in this manuscript, and the others may reasonably be referred to those parts that are lost. Of the 63 chapters, 41 relate the constitutional changes in the Athenian state from the time of Cylon in 632 B.C., to the restoration of the democracy in B.C. 403, while the remaining chapters describe the duties of the various magistrates. It is said that the work will not alter our general views of Greek history, but supplies many new details, and fixes many dates that were heretofore uncertain. One of the most important items thus revealed to us is the fact that Themistocles took a leading part in the overthrow of the Areopagus, he being a member of that body at the time. The text of the work has been printed, and will shortly be published, with introduction and notes by F. G. Kenyon, an assistant at the museum in the department of manuscripts; and it will also be issued in facsimile. The finding of this work, together with some discoveries of less importance previously made in Egypt, give ground for hope that other classical works, including some of the lost lyric and dramatic poetry, may yet be recovered.

— Capt. de Place of Paris has invented an instrument for detecting flaws in metal castings and forgings, which is called the "sciséophone." According to the London *Times*, the apparatus consists of a small pneumatic tapper worked by the hand, and with which the piece of steel or iron to be tested is tapped all over. Connected with the tapper is a telephone with a microphone interposed in the circuit. Two operators are required, — one to apply the tapper, and the other to listen through the telephone to the sounds produced. These operators are in separate apartments, so that the direct sounds of the taps may not disturb the listener, whose province it is to detect flaws. The two, however, are in electrical communication, so that the instant the listener hears a false sound he can signal to his colleague to mark the metal at the point of the last tap. In practice the listener sits with the telephone to his ear, and so long as the taps are normal he does nothing. Directly a false sound (which is very distinct from the normal sound) is heard, he at once signals for the spot to be marked. By this means he is able not only to detect a flaw, but to localize it. Under the auspices of the South eastern Railway Company, a demonstration of the sciséophone was given by Capt. de Place, at the Charing Cross Hotel, in the presence of several members of the Ordnance Committee and other government officials. Mr. Stirling, the company's locomotive superintendent, had previously had several samples of steel, wrought iron, and cast iron prepared with hidden flaws known only to himself. The first sample tested by Capt. de Place he pronounced to be bad metal throughout, which Mr. Stirling stated he knew it to be. Other samples were tested, and the flaws localized by means of the apparatus. On some of the bars of wrought and cast iron being broken, the internal flaws, the localities of which were known to Mr. Stirling by his private mark, were found to have been correctly localized by Capt. de Place. On the other hand, some bars were broken at points where the apparatus indicated a flaw, but where the metal proved to be perfectly sound; so that the apparatus is not yet quite trustworthy.

— Dr. William Crookes delivered his presidential address before the Institution of Electrical Engineers, London, on Thursday, Jan. 15, taking as his subject "Electricity *in transitu*: from *Plenum* to *Vacuum*." In his introductory remarks, as we learn from *Nature*, he explained that he was about to treat electricity, not so much as an end in itself, but rather as a tool, by whose judicious use we may gain some addition to our scanty knowledge of the atoms and molecules of matter, and of the forms of energy which by their mutual re-actions constitute the universe as it is manifest to our five senses. Explaining what he meant in characterizing electricity as a tool, he said, that, when working as a chemist in the laboratory, he found the induction spark often of great service in discriminating one element from another, also in indicating the presence of hitherto unknown elements in other bodies in quantity far too minute to be recognizable by any other means. In this way chemists have discovered thallium, gallium, germanium, and numerous other elements. On the other hand, in the examination of electrical re-actions in high *vacua*, various rare chemical elements become in turn tests for recognizing the intensity and character of electric energy. Electricity, positive and negative, effect respectively different movements and luminosities: hence the behavior of the substances upon which electricity acts may indicate with which of these two kinds we have to deal. In other physical researches both electricity and chemistry come into play simply as means of exploration.